United States Patent

Psenka

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[45] **May 2, 1972**

[54] TABLE TENNIS PRACTICE OR GAME BOARD

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[22] Filed: **Apr. 9, 1970**

[21] Appl. No.: **27,125**

Related U.S. Application Data

[63] Continuation of Ser. No. 615,816, Feb. 13, 1967, abandoned.

[52] **U.S. Cl.**.....**273/102.2 R,** 273/102 S, 273/103, 273/127 C, 273/30

[51] **Int. Cl.**.....**B63b 61/00**

[58] **Field of Search**.....273/102.2, 103, 105, 30, 127 C, 273/179 C, 182 R, 182 A

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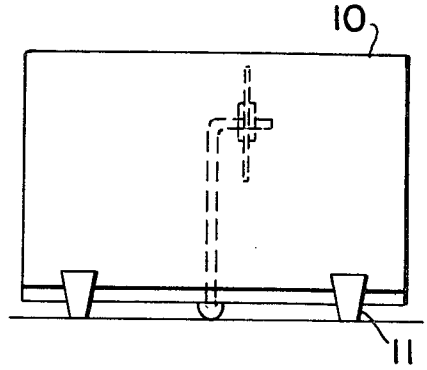
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Primary Examiner—Richard C. Pinkham
Assistant Examiner—Theatrice Brown
Attorney—Whitemore, Hulbert & Belknap

[57] **ABSTRACT**

A game board for use on a table such as a table tennis table, the board being angularly adjustable to control the angle of bounce of a ball batted against the board. The board is also provided with indicia, openings for switch actuating devices to permit competitive games or games of skill in which a single player attempts to control the ball so as to hit indicia, pass through openings, or operate a switch. In the embodiments wherein the board has openings for passage of balls, a chute is provided for returning balls to the player.

6 Claims, 22 Drawing Figures



Patented May 2, 1972 3,659,850

2 Sheets-Sheet 1

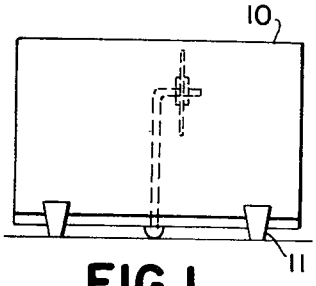


FIG. 1

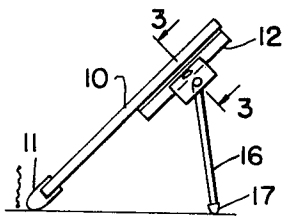


FIG. 2

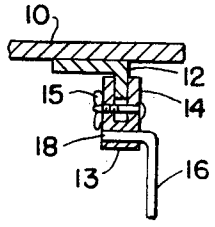


FIG. 3

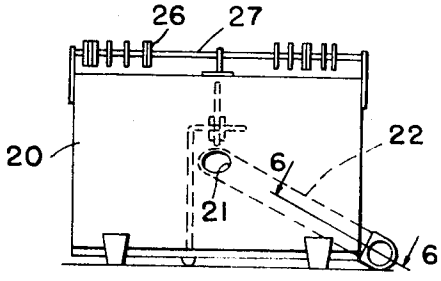


FIG. 4

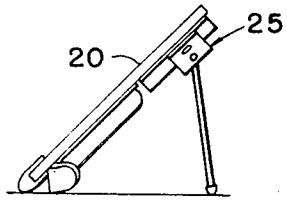


FIG. 5

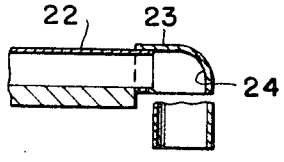


FIG. 6

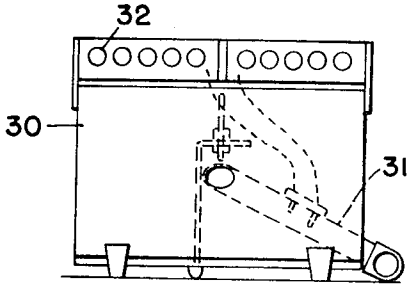


FIG. 7

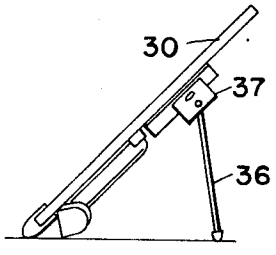


FIG. 8

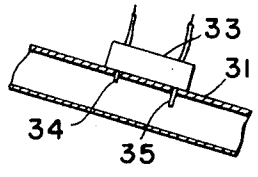


FIG. 9

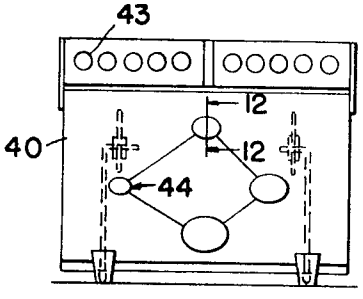


FIG. 10

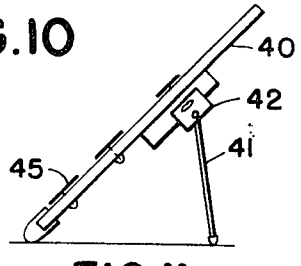


FIG. 11

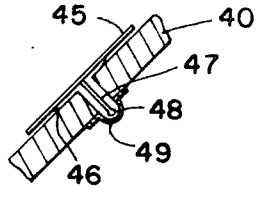


FIG. 12

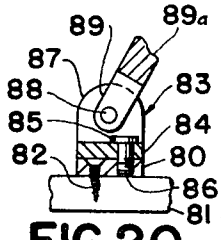


FIG. 20

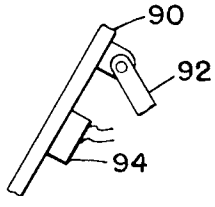


FIG. 21

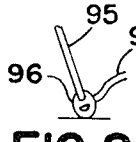


FIG. 22

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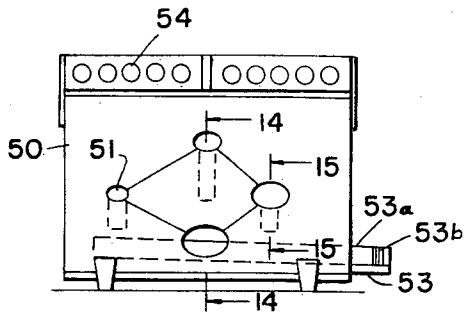


FIG. 13

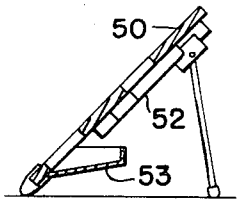


FIG. 14

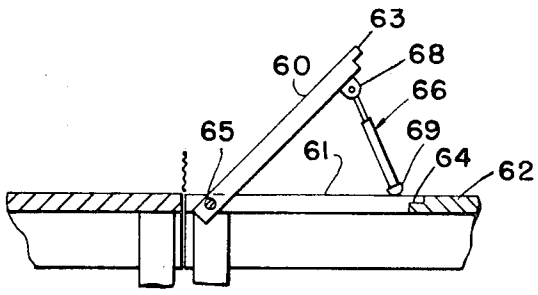


FIG. 16

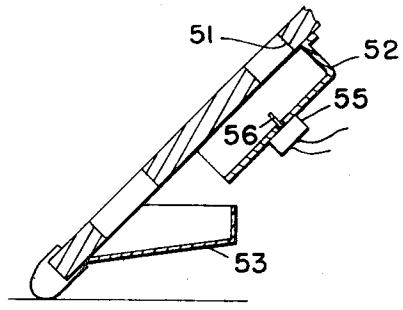


FIG. 15

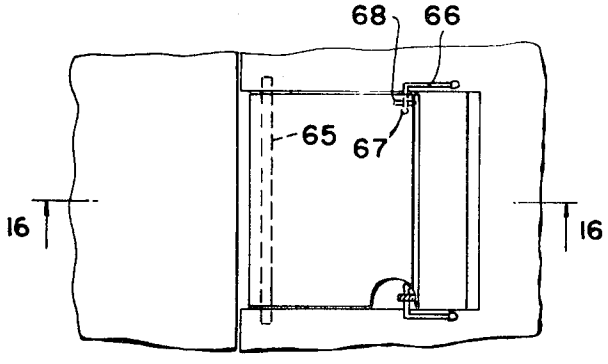


FIG. 17

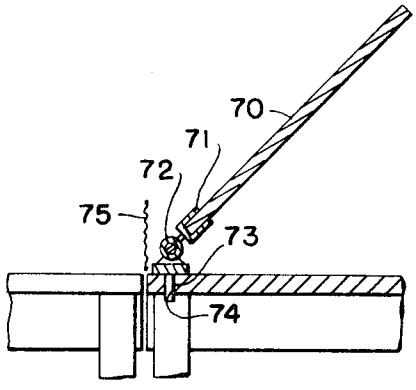


FIG. 19

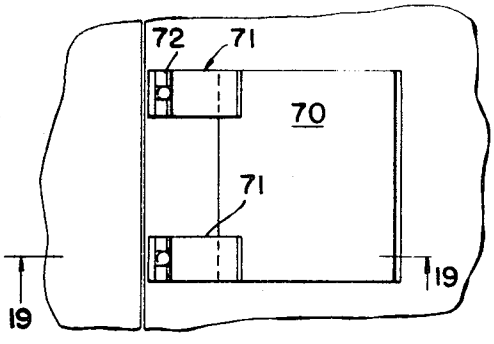


FIG. 18

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TABLE TENNIS PRACTICE OR GAME BOARD

This application is a continuation of application Ser. No. 615,816 filed Feb. 13, 1967 and since abandoned.

BACKGROUND OF THE INVENTION

It has heretofore been proposed to provide a table for table tennis in which one-half of the table may be swung to vertical position to form a back stop at which table tennis balls may be bounced for practice purposes.

SUMMARY OF THE INVENTION

In accordance with the present invention a relatively small practice or game board is provided in conjunction with a table, such as a table for table tennis, the board being angularly adjustable to control the angle of bounce of table tennis balls batted against the board. In preferred embodiments of the invention the board is further provided with indicia, openings, or switch actuating devices to permit competitive games or games of skill in which a single player attempts to control the ball so as to hit indicia, pass through openings, or operate switches.

In further improved embodiments of the invention means are provided effective to return a ball which has passed through an opening in the practice board.

It is accordingly an object of the present invention to provide a practice or game board for table tennis adapted to be supported in angularly adjusted position on a table.

It is a further object of the present invention to provide a practice or game board carried by the table and adapted to be moved into a non-operative position.

It is a further object of the present invention to provide a board of the character described having an opening or openings therein through which a table tennis ball may be batted, preferably in conjunction with means for returning a ball to the player.

It is a further object of the present invention to provide a board of the character described with signal lights and switches controlled by batted balls to operate the signals in accordance with scoring made by an individual player.

Other objects and features of the invention will become apparent as the description proceeds, especially when taken in conjunction with the accompanying drawings, illustrating preferred embodiments of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a front elevational view of a simple form of practice or game board.

FIG. 2 is a side elevational view of the board seen in FIG. 1.

FIG. 3 is an enlarged sectional view on the line 3—3, FIG. 2.

FIG. 4 is a front elevational view of a modified form of game board.

FIG. 5 is a side elevation of the board shown in FIG. 4.

FIG. 6 is a fragmentary enlarged section on the line 6—6, FIG. 4.

FIG. 7 is a front elevational view of a further modified form of game board.

FIG. 8 is a side elevational view of the board shown in FIG. 7.

FIG. 9 is an enlarged fragmentary sectional view showing control switches associated with the board.

FIG. 10 is a front elevational view of another modified form of game board.

FIG. 11 is a side elevational view of the board shown in FIG. 10.

FIG. 12 is an enlarged fragmentary view on the line 12—12, FIG. 10.

FIG. 13 is a front elevational view of further modified form of game board.

FIG. 14 is a sectional view on the line 14—14, FIG. 13.

FIG. 15 is an enlarged fragmentary sectional view on the line 15—15, FIG. 13.

FIG. 16 is a fragmentary sectional view through a table tennis table, taken substantially on the line 16—16, FIG. 17.

FIG. 17 is a plan view of the structure shown in FIG. 16.

FIG. 18 is a fragmentary plan view showing a further modified form of practice board.

FIG. 19 is a side elevational view on the line 19—19, FIG. 18.

FIG. 20 is a fragmentary view, partly in section, showing a further modified form of practice board.

FIG. 21 is a fragmentary elevational view showing a counter associated with the practice board.

FIG. 22 is a fragmentary view illustrating a counter associated with the board prop.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to FIGS. 1–3 there is illustrated a practice board 10 which is in the form of a rectangular board of sufficient thickness to provide a satisfactory bounce when a table tennis ball is batted against the board. At its lower edge the board is provided with two foot members 11 which may be of a suitable friction material such for example as rubber. In addition, means are provided for supporting the board at different angles. This means comprises a rail 12 at the back of the board formed from angle iron as indicated in FIG. 3. Associated with the rail 12 is a block 13 having jaws 14 adapted to grip the rail 12 under the action of a clamping screw 15. A support leg 16 having a friction foot 17 has a laterally extending arm 18 received in an opening in the block 13. It will be understood that in practice the practice board will normally be positioned across the net from the player and the angle at which the surface of the board is inclined will be selected such as to produce the required return bounce, taking into account the speed with which the ball is hit. Obviously, if the ball is hit with considerable speed, the practice board will be brought into a much more nearly vertical position than that illustrated.

Referring now to FIGS. 4–6 there is illustrated a modified board 20 which differs principally from the board shown in FIGS. 1–3, in that the board 20 is provided with a central opening 21 of a size substantially larger than the table tennis ball and through which the user attempts to bat the ball. The board is provided with an inclined return chute 22 which may be tubular or which may be closed at one side by the back surface of the board 20. In any case, extension means are provided at the discharge end of the chute to cause the ball to roll forwardly under the net to the user. This means, as best seen in FIG. 6, comprises a cap element 23 the end surface of which is concave or inclined as indicated at 24 to cause a ball to roll forwardly or downwardly as seen in FIG. 6. Since the angle of the board may be changed by adjustable support mechanism indicated generally at 25, it is desirable for the cap 23 to be rotatable on the chute member 22.

In addition, the board 20 may be provided with a plurality of counters such for example as apertured discs 26 slidable on a rod 27 mounted on the top of the board. These counters are useful where the game board is used competitively and serve for the purpose of keeping score.

Referring now to FIGS. 7–9 there is illustrated a still further modified game board 30 which is generally similar to the board 20 shown in FIG. 4, and is provided with the inclined return chute 31 similar to that described above. In this case the board is provided at its top with a plurality of signal lights 32 and switch means, best seen in FIG. 9, are provided in association with suitable counting switches or the like (not shown) to close circuits to the lights 32 at either side of the board in a predetermined sequence. For this purpose the contestants may use balls of different diameter and the switch 33 seen in FIG. 9 has a pair of switch actuating contacts 34 and 35 which extend different distances into the chute 31. The game board is again adjustable as to angle by support means including the leg 36 pivoted to the adjustable block 37, as previously described.

Referring now to FIGS. 10–12 there is illustrated another board 40 which again, is supported in selected angular positions by a leg 41 pivoted to an adjustable block 42 as previously described. In this case the board is provided with signal elements such as lights 43 controlled by suitable counting

relays or the like (not shown). The game board **40** is intended to simulate known games such for example as baseball, and accordingly, switch actuating target indicia **44** are provided. The indicia may be in the form of discs **45** as subsequently described, and are of different size and are arranged in a layout simulating a baseball diamond. Thus for example, the largest disc may represent first base and if this disc is contacted by a ball it corresponds to a one-base hit. Similarly, selectively smaller discs may represent second and third base and home plate and when these discs are engaged by a ball the counting mechanism scores the results as double, triple, and home runs respectively.

As best seen in FIG. **12**, the flat thin discs **45** are spaced slightly from the board **40** by very light flexible leaf springs **46**. Extending rearwardly from each of the discs **45** is a stem **47** terminating in a head **48** which is closely surrounded by a metal contact cup **49**. It will be appreciated that an electric circuit is provided which is completed when the contact element **48** touches the cap **49**. The construction is extremely light, as previously mentioned, and operates so that an ordinary table tennis ball touching any part of the disc **45** will cause closure of the switch. Thus, if the ball contacts the disc exactly centrally contact element **48** moves perpendicularly to the plane of the board and contacts the bottom of the cup **49**. On the other hand, if the ball contacts an edge portion of the disc **45** so that the disc tilts, the contact element **48** moves laterally and engages a side of the disc.

Referring now to FIGS. **13–15** there is shown a game board **50** designed for simulating known games such for example as baseball. In this case the game board is provided with a plurality of openings **51** of different size arranged in the layout of a baseball diamond, and again, the opening simulating first base is the largest and the opening simulating home plate is the smallest. In this case, in the rear of each opening there is provided a dished plate **52** one of which is illustrated in FIG. **15**, adapted to receive a ball passing through the associated opening **51** and to cause it to roll downwardly into a laterally inclined return chute **53**. The chute **53** has a wall surface **53***a* which is inclined as indicated at **53***b* to direct a ball forwardly when it reaches the lower end of the chute **53**. Again, the board **50** may be provided with signal lights indicated at **54** which may be operated automatically by suitable counting relays or the like actuated by switches **55** having switch actuators **56** located within the enclosure defined by the dished plate **52**.

Referring now to FIGS. **16** and **17** there is illustrated a game or practice board **60** which in this case is adapted to fit within an opening **61** formed in the table **62**. The board **60** is rabbeted as indicated at **63** for cooperation with a corresponding shape at **64** in the opening **61**. The board **60** is pivoted within the opening **61** as indicated at **65** and is adapted to be supported in a desired angular position by legs **66**. While a single leg could be provided centrally, preferably two legs **66** are provided having transversely extending portions **67** slidable in brackets **68** so that the legs may be pushed inwardly from the position shown in FIG. **17** so as to pass through the opening **61** in the table. The leg **66** is composed of two telescopically slidable sections so that the angle of the table may be widely varied while at the same time the angularity of the leg **66** with respect to the table may be such as to maintain stability due to the friction between the foot **69** and the table top.

Referring now to FIGS. **18** and **19** there is illustrated yet another embodiment of the invention in which a practice board **70** is shown as supported by two brackets **71** at adjacent corners, the brackets including friction hinges **72** in which the friction is sufficient to retain the board in any angular position of adjustment. The brackets include pegs **73** which are snugly received in openings **74** provided in the table. With this arrangement the practice board may be removed leaving only the small openings **74** which are located in close proximity to the net **75** and which therefore do not interfere with using the table for table tennis.

Referring now to FIG. **20** there is shown a further modification in which a strip **80** is fastened to the top of a table **81** by screws **82** or the like. Adapted to be attached to the top of the strip **80** are brackets **83** having base portions **84** connected to the strip by screws **85**, the threaded shanks of which are received in threaded openings **86** in the strip. The brackets **83** have upstanding ears **87** provided with friction hinge connections **88** to arms **89** formed on the practice board **89**a.

It will be appreciated that if instead of the relatively light strip **80**, a relatively heavier support portion were provided, then the practice board **89**a could be retained in position without the necessity for attaching screws **82**.

Referring now to FIG. **21** there is illustrated a portion of a practice board **90** retained in the desired angular position by a prop or props **92**. At the rear of the board **90** there is provided an inertia counting device indicated generally at **94**. Details of this device are not illustrated since the device consists only of a switch adapted to be momentarily closed by the motion of the board when struck by a ball, the switch being connected to conventional counter mechanism. With a counter of this type it is possible for players to compete to determine the maximum number of times in which they keep the ball in play. Obviously of course, the device is also useful when a single player is attempting to determine the total number of times which he can keep the ball in play without missing.

In FIG. **22** there is illustrated a variation of the concept illustrated in FIG. **21**. In this Figure a prop **95** is provided having a friction foot **96** in which is incorporated an inertia switch adapted to be closed momentarily as a result of forces applied to the foot resulting from impact of the ball. The inertia or impact switch is connected by suitable wiring indicated at **97** to a conventional counting device.

In FIGS. **7–9** there was suggested an arrangement in which different size balls could be employed to actuate different switches controlling counting devices or the like. Instead of using balls of different size, balls having different physical characteristics could be employed. For example, balls of different color may be used and the counting equipment include color sensing devices. Alternatively, balls having different magnetic properties may be employed. Thus, iron particles may be embedded in or coated on the wall of a ball, and a magnetic proximity switch of known type employed, or magnetic means used to divert the ball with magnetic properties into a different path than magnetically inert balls.

In the foregoing there has been a disclosure of target areas, which according to several embodiments of the invention are constituted by openings through the board. In another embodiment of the invention these target areas comprise the light discs **45**. Also, the constructions comprise means for indicating when a ball has impinged on the target area. In the case of the opening the opening itself constitutes the means for indicating impingement by a ball, when the ball passes through the opening. In some cases of course the ball will strike the edge of the opening and will be deflected erratically, this also serving as an indication that the ball has impinged the area. In the case of the disc **45** the means indicating impingement may be the signal light energized by the switch **47**.

The drawings and the foregoing specification constitute a description of the improved table tennis practice or game board in such full, clear, concise and exact terms as to enable any person skilled in the art to practice the invention, the scope of which is indicated by the appended claims.

What I claim as my invention is:

1. A practice or game board for association with a table tennis table, means for adjustably supporting said board on said table to extend generally upwardly therefrom, the adjustable support means comprising a rail extending in the direction between the top and bottom edges of said board, a leg supporting block adjustable longitudinally of said rail, angularly adjustable leg means pivoted to said block, means for locking said block to different positions of adjustment to vary the angle of bounce of a table tennis ball, said board having a target area of limited extent thereon to be impinged by a ball, and means for indicating when a ball has impinged on said area.

2. A rigid practice or game board for association with a table tennis table, means for adjustably supporting said board on said table to extend generally upwardly therefrom, the adjustable support means comprising adjustable leg means pivoted to the rear of the board, means for locking the leg means in different positions of adjustment to vary the angle of bounce of a table tennis ball from the rigid board, said board having a target area of limited extent thereon to be impinged by a ball, and means for indicating when a ball has impinged on said area, said target area being constituted by an opening through said board of a size to permit passage of a table tennis ball, an inclined chute at the rear of said board adapted to receive a ball passing through said opening, said chute being inclined laterally and downwardly and then forwardly to cause the ball to roll downwardly therein around the side of the board and then forwardly to return to the player.

3. A board as defined in claim 2, said chute having an angularly adjustable ball directing cap at the lower end of said chute adapted to direct the ball forwardly, said cap being adjustable about the axis of the chute to compensate for variations in angular position of the board.

4. A board as defined in claim 2 comprising switch means in said chute and signal means actuated by said switch means for indicating passage of balls through said chute, said switch means comprising two switch actuators extending different distances into said chute whereby only one of said switches is actuated by a smaller ball and both of said switches are actuated by a larger ball.

5. A board as defined in claim 2 comprising sensing means in said chute to distinguish between balls having different physical properties.

6. A rigid practice or game board for association with a table tennis table, means for adjustably supporting said board on said table to extend generally upwardly therefrom, the adjustable support means comprising angularly adjustable leg means pivoted to the rear of the board, means for locking the leg means to different positions of angular adjustment to vary the angle of bounce of a table tennis ball from the rigid board, said board having a target area of limited extent thereon to be impinged by a ball, and means for indicating when a ball has impinged on said area in which said target area comprises target indicia comprising a thin light movable rigid sheet element, the means for indicating when a ball has impinged on said area comprising a switch contact carried by said rigid sheet element, a cooperating switch contact carried by the board to provide for closure of the switch comprising said contacts when said rigid board is impinged by a ball, and relatively light leaf springs interconnecting said sheet element to the board, said leaf springs being yieldable to provide rearward movement or lateral tilting of the contact carried by said sheet element dependent upon the portion of the sheet element engaged by a ball, the contact carried by the board being in the form of a cup closely surrounding the contact carried by the sheet element.

* * * * *